UNITED STATES PATENT AND TRADEMARK OFFICE

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10/785,596	02/23/2004	Vishal Sinha	FOUND-0096	3221

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FOUNDRY-THELEN REID BROWN RAYSMAN & STEINER LLP
P.O. BOX 640640
SAN JOSE, CA 95164-0640

EXAMINER
KIM, WESLEY LEO

ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
10/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>29 June 2007</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☐ Claim(s) *1-19, 23-30, 38 and 41-43* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-2, 7-16, 23-24, 29-30, 38, and 41-43* is/are rejected.

7) ☒ Claim(s) *3-6, 17-19 and 25-28* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set
forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this
application is eligible for continued examination under 37 CFR 1.114, and the fee set
forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action
has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/29/07
has been entered.

Response to Amendment

This Office Action is in response to Amendment filed on 8/8/07.

- Claims 20-22, 31-37, and 39-40 are currently amended.

- Claims 1-19, 23-30, 38, and 41-43 are pending in the current Office Action.

Response to Arguments

Applicant's arguments filed 8/8/07 have been fully considered but they are not
persuasive.

- Applicant argues that Rue does not teach of a determination of whether the mobile
  access service 305 is the home agent for purposes of tunneling traffic therefore to
  the mobile access server 315 in the manner of the invention.

  The examiner would like to note that the rejection of the claims were made
  with Rue (US 2003/0185172) in view of Lee et al (US 6535493 B1) and not only with
  the Rue reference. However, Rue does teach that it is well known in the art that

tunneling may be used in the manner of the invention with a disadvantage in terms

of speed. Rue does not teach that it wont work, just that it is a bit slower.

- Applicant argues that Neither Rue nor Eglin disclose provisions for determining

  whether roaming is between two VLANs serviced by the same switch, as this is

  simply unnecessary in Englin because of the use of FLAN switches 120.

  The examiner respectfully disagrees. From Fig.3 of Englin it is clearly seen

that the Ethernet switch services roaming between at least 2 VLANs.

- Applicant argues that "Col.9;57-61" of Lee cannot teach both the limitations of

  whether or not a roam replay was successfully or unsuccessfully sent.

  The examiner respectfully disagrees. Upon further inspection of the cited

passage, it is clear that the citation teaches both situations and the examiner is not

stretching the passage into something that it is not.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
conditions and requirements of this title.

Claim 38 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

Claim 38 is found to be unpatentable under 35 USC 101 as being

nonstatutory. While the limitations recite "A program storage device readable by a

machine, tangibly embodying a program of instructions executable by the machine

to perform..." is unclear as to what a program storage device is (e.g. cd, floppy disk,

flash drive) and what the machine is. In contrast, a claimed "computer-readable

medium <u>encoded</u> with computer executable instructions to perform..." is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer programs functionality to be realized, and is thus statutory. See Lowry, 32F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly it is important to distinguish claims that define descriptive material <u>per se</u> from claims that define statutory inventions.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-2, 7-8, 16, 23-24, 29-30, 38, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rue (US 2003/0185172 A1) in view of Lee et al (US 6535493 B1).

Regarding Claims 1, 16, 23, 38, and 41-43, Rue teaches storing information regarding the client (<u>Par.47;1-10, if the switch was a home agent then the information was stored, however, switches which weren't home agents do not store any client information (Par.45; 4-Par.46;6)</u>); receiving the roam request at the first switch (<u>Par.44;9-12</u>); determining, in response to said receiving, if the first switch has stored information regarding the client (<u>Par.45; 4-Par.46;6, determines that the switch does not have information regarding client and Par.47;1-10, determines that the switch has information regarding the client</u>); and teaches establishing a

connection for the client from the first switch to the second switch (Par.47;1-10), where it is known to use a tunneling structure to connect the two switches (Par.35; 10-13), and sending a roam reply to the second switch (Par.47;4-10, the find response message is a reply), however Rue **is silent on** removing the stored information regarding the client from the first switch if the first switch is determined not to be a home agent for the client.

Lee teaches tunneling (Col.6;35-40) and Lee further teaches that it is known that if an agent was a home agent but is no longer a home agent then the information regarding the client is removed (Col.3;17-22).

To one of ordinary skill in the art, it would have been obvious to modify Rue with Lee at the time of the invention, such that the stored information regarding the client from the first switch is removed if the first switch is determined not to be a home agent for the client, to provide a method of freeing up memory from the associated switch, which the client is no longer associated with, consistent with high level concepts for memory management.

Regarding Claims 2 and 24, Lee teaches all the limitations as recited in claim 1 and 23, respectively, and Lee further teaches roam reply contains network configuration information regarding the client (Col.9;46-49, the reply contains information regarding whether or not the client registration request has been accepted or denied, which is network configuration information).

Regarding Claims 7 and 29, Lee teaches all the limitations as recited in claim 1 and 23, respectfully, and Lee further teaches that a roam reply indicates

failure if something went wrong during the process, otherwise it indicates success (Col.8;13-15, roam request granted indicates success, roam request denial indicates failure).

Regarding Claims 8 and 30, Lee teaches all the limitations as recited in claim 1 and 23, respectfully, however Lee **is silent on** the roam request is an Inter Switch Roaming Protocol (ISRP) roam request.

Lee teaches a registration request (i.e. roaming request) is a UDP protocol registration request (Col.10;35-45). One of ordinary skill in the art would find it obvious to use an alternative protocol well known in the art, an inter-switch link protocol (i.e. ISRP), for routing data between VLAN switches.

2. Claims 9-11, 20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rue (U.S. Pub. 2003/0185172 A1) in view of Eglin (U.S. Pub 2003/0210671 A1).

Regarding Claims 9, 20, Rue teaches receiving a move request (Par.44;9-12, handover request message) from an access point (Par.44, fourth access point) associated with the switch (Par.45; second mobile access server); and sending a roam request to all peer switches in the same mobility domain as the switch (Par.46;1-6). To the examiner a home mobile access server find request message (MAS) is a roam request since both are trying to obtain information on the mobile node from the home switch so that data may appropriately be routed to the roaming mobile node, however Rue **is silent on** determining if the move request is associated with client roaming between two virtual local area networks (VLANs) serviced by the same switch by including said first switch in said sending.

Eglin further teaches a mobile device may roam from one VLAN to another

VLAN serviced by the same switch (Fig.3) and Rue further teaches that a switch

itself is checked to determine if information on the mobile node is stored in the

database (Par.45;4-7, i.e. a roam request is sent to itself), therefore it is obvious that

it would be determined whether or not the move request is associated with the client

roaming between two virtual local area networks serviced by the same switch in said

sending.

To one of ordinary skill in the art, it would have been obvious to modify Rue,

such that it is determined if the move request is associated with client roaming

between two virtual local area networks (VLANs) serviced by the same switch by

including said first switch in said sending, so that data may appropriately be routed

to the roaming mobile node.

Regarding Claims 10, 11, Rue and Eglin teach all the limitations as recited in

claim 9, and although the combination **is silent on** the move request being a Switch

Access Point Protocol (SAPP) move request or ISRP roam request.

Rue teaches the mobile access server (i.e. switch) controls access points and

supports signal protocol (Par.27;10-11). To one of ordinary skill in the art, it is

obvious that signal protocol used for the roam request may be of type Switch Access

Point Protocol (SAPP) or ISRP.

3. Claims 12,15, 21, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Lee et al (U.S. Patent 6535493 B1) in view of Rue (U.S. Pub. 2003/0185172

A1) and Strachan et al (U.S. Pub 2004/0105440 A1).

Regarding Claims 12, 21, and 40, Lee teaches handling a roam reply at a
switch (Col.8;13-15, foreign agent handles roam reply), receiving the roam reply
(Col.8;13-15, foreign agent handles roam reply, reply is received); determining if the
roam reply indicates that the handling of a roam request was successful (Col.9;57-
61, sends a predetermined code to allow determination of success or failure of roam
request); sending a reply to a corresponding access point indicating failure if the
handling of said roam request was not successful (Col.9;57-61, sends a code
specifying reason of denial); setting the switch as a Foreign Agent for the client if the
handling of said roam request was successful (Col.8;32-34, when mobile unit moves
to a new subnet, (i.e. under the control of a new router or switch) other than its home
(i.e. home router or switch), this new subnet (i.e. the new switch) becomes its foreign
subnet, i.e. foreign agent); and sending a move reply to said corresponding access
point if the handling of said roam request was successful (Col.8;13-15), however Lee
is silent on receiving a roam reply from a switch determined, in response to the
roam request, to be a home agent, the roam reply having information regarding a
client that is roaming to the switch, the information not previously available at the
switch; and switching a router designated by the client with a default router for the
switch if the handling of said roam request was successful.

Rue teaches that it is well known in the art to receiving a roam reply from a
switch determined, in response to the roam request to be a home agent (Par.45; 4-
Par.46;6, determines that the switch is not a home agent for the client and Par.47;1-
10, is determined that the switch is a home agent for the client), the roam reply

having information regarding a client that is roaming to the switch, (<u>Par.52;7-12 and Par.53;5-11, internet protocol address of the mobile node (i.e. client) is information regarding the client</u>), the information not previously available at the switch (<u>Par.47, the internet protocol address of the first mobile access server was not known, hence a find request message</u>);

Strachan teaches switching a router designated by the client with a default router for the switch if the handling of said roam request was successful (<u>Par.28 and Par.42, the edge switch is the designated router and the core router is the default router</u>).

To one of ordinary skill in the art it would have been obvious to modify Lee with Rue and Strachan, since they are from the same search areas, viz. supporting mobility between subnetworks, such that the a roam reply is received from a switch determined, in response to the roam request, to be a home agent; roam reply has information regarding a client that is roaming to the switch, the information not previously available at the switch; and switching a router designated by the client with a default router for the switch if the handling of said roam request was successful, to provide a method of enabling seamless roaming of mobile devices among wireless networks.

Regarding Claim 15, the combination as discussed above teaches all the limitations as recited in claim 12, however the combination **is silent on** move reply being a SAPP move reply.

Rue teaches the mobile access server (i.e. switch) controls access points and

supports signal protocol (Par.27;10-11). To one of ordinary skill in the art, it is

obvious that signal protocol used for the roam request may be of type Switch Access

Point Protocol (SAPP).

4. Claims 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lee et al (U.S. Patent 6535493 B1), Rue (U.S. Pub. 2003/0185172 A1), and

Strachan et al (U.S. Pub 2004/0105440 A1) in further view of Edney et al (U.S. Pub.

2004/0255033).

Regarding Claims 13 and 22, Lee, Rue, and Strachan teach all the

limitations as recited in claim 12 and 21, respectively, however the combination **is**

silent on trapping all address resolution protocol (ARP) packets from the client; and

sending an ARP reply to the client with a default router address for the switch.

Lee teaches trapping all address resolution protocol packets from the client

(Col.11;30-32) and means for sending an ARP reply to the client with a default router

address for the switch (Col.11;20-22).

Edney teaches a client device sending a ARP Request an access point and

sending a ARP reply back to the client device (Par.29;6-10).

To one of ordinary skill in the art it would have been obvious to modify, Lee,

Rue, and Strachan with Edney, since they are from similar search areas,

transmitting data packets over wireless networks, such that there exists a means for

trapping all address resolution protocol (ARP) packets from the client; and means for

sending an ARP reply to the client with a default router address for the switch, to

provide a method of securely transmitting data to appropriate destinations.

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al

(U.S. Patent 6535493 B1), Rue (U.S. Pub. 2003/0185172 A1), and Strachan et al

(U.S. Pub 2004/0105440 A1) in further view of Eglin (U.S. Pub. 2003/0210671 A1).

Regarding Claim 14, Lee, Rue, and Strachan teach all the limitations as

recited in claim 12, however the combination **is silent on** the move reply includes a

new VLAN identification.

Eglin further teaches updating includes updating a virtual local area network

(VLAN) tag corresponding to the client with a new VLAN tag corresponding to a new

VLAN to which the client has roamed (Par.28;22-26, VLAN tag is changed).

To one of ordinary skill in the art, it would have been obvious to modify Lee,

Rue, and Strachan, such that a virtual network tag corresponding to the client is

changed, to provide a method of maintaining updated connectivity of the mobile

devices by changing the VLAN tag and associating it to the correct VLAN.

Allowable Subject Matter

Claims 3-6, 17-19, and 25-28 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form including all

of the limitations of the base claim and any intervening claims.

Claims 3, 17, and 25 teach limitations directed towards discovering if the first

switch is the same as the second switch by determining if the roam request received by

the first switch was also sent by the first switch and updating a virtual tag. These teachings in combination with the remaining limitations cannot be found in the prior art.

Claims 4-6, 18-19, and 26-28 would be allowable as being dependent upon the claims 3, 17, and 25.
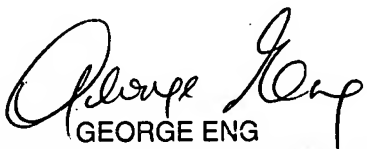
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley L. Kim whose telephone number is 571-272-7867. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WLK

GEORGE ENG
SUPERVISORY PATENT EXAMINER